



**ADDITION OF RULES AT 329 IAC 16 REGARDING ELECTRONIC WASTE
#05-181 (SWMB)**

Overview

This rulemaking concerning the storage, processing and disposal of electronic waste (e-waste).

Citations Affected

329 IAC 16.

Affected Persons

Owner, operators, or permittees of e-waste storage and/or processing facilities.

Reason(s) for the Rule

Electronic waste (e-waste) handling and disposal has become a pressing nationwide environmental issue of concern. The United States generates more e-waste than any other nation, according to the United States Environmental Protection Agency (U.S. EPA). Electronic waste, or e-waste, includes cathode ray tubes (CRTs) from televisions and computer monitors, the central processing units (CPUs) and other chips from PCs, hard drives, printers, circuit boards, keyboards, cellular and cordless phones, televisions, VCRs, and DVD players. E-waste can include any item that has an electric cord or a battery. E-waste is also known as WEEE, or waste from electrical and electronic equipment. In general, computer equipment is a complicated assembly of more than 1,000 materials, many of which are highly toxic, such as chlorinated and brominated substances, toxic gases, toxic metals, biologically active materials, acids, plastics, and plastic additives.

Indiana law has addressed white goods disposal for more than 13 years. White goods include clothes washers and dryers, refrigerators, stoves, and dishwashers. Indiana Solid Waste Management Districts must provide for the proper management and disposal of white goods as a part of their approved solid waste management plans. Generally, these items are repaired or recycled, so this background report will concentrate on electronic waste other than white goods.

The health impacts of the mixtures and material combinations in electronic products often are not known. However, there is evidence that computer recyclers have high levels of dangerous chemicals in their blood. (Sjodin, et al. "Flame Retardants Exposure—Polybrominated Diphenyl Ethers (PBDEs) in Blood from Swedish Workers". Environmental Health Perspectives. Vol. 107, Number 8, August 1999.) Experts estimate that as of 2004 there were more than 315 million obsolete computers in the U.S., many of which were destined for landfills, incinerators, or hazardous waste exports. Approximately 6.3 million computers were obsolete in Indiana as of 2004. No national specific mandates exist for the collection and handling of e-waste in the United States. California, Maine, Massachusetts, and Minnesota have recognized the problem to the extent of banning cathode ray tubes (CRT) from municipal solid waste landfills.

Public Participation and Workgroup Information

An external workgroup has been established to discuss

issues involved in this rulemaking. The workgroup is made up of IDEM staff and a cross section of stakeholders representing the regulated community, universities, municipalities, consultants, and solid waste management districts. This workgroup has met on a regular basis to develop the draft rule language. From September 2005 to May 2006, the external workgroup has met nine times to discuss the requirements and draft language.

Economic Impact of the Rule

There may be a cost of approximately \$20,000 to \$50,000 per acre to allow indoor storage and processing of all e-waste at the facility. There is no cost associated with sending in a registration form, but there would be a cost for obtaining a closure bond. Some costs are merely costs of doing business, such as record keeping, operational safety plans, employee training, and protective storage requirements. The costs for a facility storm water permit, as applicable, are imposed by separate environmental rules.

In contrast, if the site would become contaminated, the cost of soil and ground water remediation is at a minimum \$400,000 to \$800,000 per acre. The United States Environmental Protection Agency estimates that the average savings under the 2006 CRT rule for a previously regulated small quantity generator is \$520 per year; for a previously regulated large quantity generator, the average saving is \$1,091 per year. (See the Cost/Economic Impact, Hazardous Waste Management System; Modification of the Hazardous Waste Program; Cathode Ray Tubes; FR Vol. 71, No 145, pg.42928, 7/28/06.)

For the facilities required to obtain a solid waste processing facility permit under 329 IAC 11, the cost varies; however, to permit, construct, and operate a solid waste processing facility, the cost is approximately \$400,000 to \$750,000. Under this proposed rule, the processing or storage of e-waste is an activity excluded from the requirement to obtain a solid waste processing facility permit under 329 IAC 11, unless the e-waste will be processed by thermal or chemical treatment.

The estimated net fiscal impact of this rule may be insignificant because many of the costs associated with this article are either required under federal law or are a common business practice such as record keeping, operational safety plans, proper storage, and closure. There will not be a cost for facility registration. As a protection to the state, there will be a cost for a closure bond. It is unknown at this time what a bond will cost each facility, as it depends on the amount of e-waste stored at the facility. The expected benefits include the protection of the environment and human health from pollution caused by improperly stored and processed e-waste.

Benefits of the Rule

This rule will protect the environment and the health of the citizens of Indiana. This rule will provide a level playing field for all facilities storing, processing or disposing of electronic waste and will provide consistent and clear requirements. The environmental hazard the rule addresses is the potential for mismanagement of electronic

waste, especially cathode ray tubes. CRTs have been found to be a hazardous waste. This rule will set standards so that all e-waste will be covered under this article. The storage and operational standards in this rule should protect against spills and contamination caused by storing and processing e-waste.

Description of the Rulemaking Project

This rule will be a true "one-stop shopping" rule. It will include the new exclusion for CRTs under the hazardous waste rules at 40 CFR 260 et al., and include provisions and standards for e-waste processing, storage, and disposal under the solid waste rules. The U.S. EPA's rule for handling and recycling of cathode ray tubes was signed on July 19, 2006. The U.S. EPA "believes strongly that if the minimum requirements specified under the regulations are not met, neither the facilities nor EPA can ensure that used CRTs are being managed in a manner protective of human health and the environment".

This rule will specify minimal requirements. The minimal requirements are a registration notice, storage requirements, operational requirements, employee training, disposal requirements, and closure requirements with a closure bond. The rule will require permitting under 329 IAC 11 of certain e-waste processing facilities—thermal and chemical treatment—both because of the risks involved and the general statutory permitting requirement for thermal and chemical solid waste processing facilities.

There will be requirements for registration, some operational requirements, closure, and financial assurance.

Scheduled Hearings

First Public Hearing: January 16, 2007, 1:30 p.m., Indiana Government Center South, Conference Center Room A.

Second Public Hearing: May 15, 2007, 1:30 p.m., Indiana Government Center South, Conference Center Room A.

Consideration of Factors Outlined in Indiana Code 13-14-8-4

Indiana Code 13-14-8-4 requires that in adopting rules and establishing standards, the board shall take into account the following:

1) All existing physical conditions and the character of the area affected.

2) Past, present, and probable future uses of the area, including the character of the uses of surrounding areas.

3) Zoning classifications.

4) The nature of the existing air quality or existing water quality, as appropriate.

5) Technical feasibility, including the quality conditions that could reasonably be achieved through coordinated control of all factors affecting the quality.

6) Economic reasonableness of measuring or reducing any particular type of pollution.

(7) The right of all persons to an environment sufficiently uncontaminated as not to be injurious to:

(A) human, plant, animal, or aquatic life;
or

(B) the reasonable enjoyment of life and property.

Consistency with Federal Requirements

This rule will be consistent with all federal requirements.

Rulemaking Process

The first step in the rulemaking process is a first notice published in the *Indiana Register*. This includes a discussion of issues and opens a first comment period. The second notice is then published that contains the comments and the departments responses from the first comment period, a notice of first meeting/hearing, and the draft rule. The Solid Waste Management Board holds the first meeting/hearing and public comments are heard. The proposed rule is published in the *Indiana Register* after preliminary adoption along with a notice of second meeting/hearing. If the proposed rule is substantively different from the draft rule, a third comment period is required. The second public meeting/hearing is held and public comments are heard. Once final adoption occurs, the rule must be approved by the Attorney General and the Governor. When approved, the rule becomes effective 30 days after filing with the Indiana Register.